FIGURE 5 is a schematic view of dual saddle coil 100 mounted on a rotor 20. The saddle coils each have a similar construction to the racetrack winding shown in Figure 2, in that each coil is formed of wrapped SC coil 36 and has a cooling passage 38 for maintaining the coil at cryogenic temperatures. The saddle coils have a long side section 140 that fit into a longitudinal slot 102 in the rotor core. The slots extend the length of the core 22, and are each on opposite sides of the core. The saddle coils have end sections 154 that are adjacent the ends 156 of the rotor core. Thus, the saddle coils each extend through the pair of slots in the core and wrap around the ends of the core. A shield 90 covers the coils and provides a vacuum for the coils, and is conductive to prevent electromagnetic fields from the stator from penetrating the sensitive coils.

IN THE CLAIMS

Please substitute the following amended claim(s) for corresponding claim(s) previously presented. A copy of the amended claim(s) showing current revisions is attached.

1. (Amended) A rotor for a synchronous machine comprising:

a rotor core having a rotor axis;

a pair of super-conducting coil windings mounted on the rotor core, each of said coil windings in a respective plane that is parallel to and offset from the rotor axis, and each of said coil windings having an end section extending beyond an end of the rotor core.

3. (Amended) A rotor as in claim 1 wherein the super-conducting coils each have a pair of opposite side sections that are parallel to the rotor axis and coupled to the end section.

5. (Amended) A rotor as in claim 1 wherein the super-conduction coils included a high temperature super-conducting (HTS) wire extending around the entire coil.